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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,336	09/30/2003	Makoto Tanaka	01-504	4040

23400 7590 01/11/2005

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EXAMINER

TRAN, CHUC

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/673,336

Applicant(s)

TANAKA ET AL.

Examiner

Chuc D Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 2,7,8 and 13-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received:

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/30/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter “the first frequency band is in a higher frequency side than the second frequency band” which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. How the first frequency band is in a higher frequency side than the second frequency band work with the specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 6, the Examiner does not understand how the “first antenna is provided on the surface of the substrate sheet”. It appears from the illustration that the first antenna is provided above the surface of the substrate sheet. This description deems to conform with the depiction show in Fig. 12 and to include the radiating element 24 or 25 of the first antenna may be formed on the dielectric material 9 show in Fig. 28 and Fig. 29. Applicant is encouraged to implement this type of language in the interest of improving it's clarity.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-6 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sievenpiper et al (USP. 6,433,756) in view of Tanaka Makoto (JP 2003304113).

Regarding claims 1 and 3, Sievenpiper et al disclose a multiple frequency common antenna comprising: a substrate (30) (Col. 7, Line 20) having a band gap for prohibiting propagation of an electromagnetic wave on a surface in a particular frequency band (Sievenpiper et al. Col. 8, Line 14 & 30);

- a first antenna (10) for resonating in a first frequency band within the band gap (Sievenpiper et al. Col. 10, Line 9).

However, Tanaka Mokoto disclose a second antenna (30) (Tanaka. Fig. 3) for resonating in a second frequency band out of the bad gap (Tanaka. Page. 5, Line 30). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect the second antenna (30) of Tanaka into the first antenna (21) of Sievenpiper with the same power feeding (16) (Sievenpiper. Fig. 3) in order to improve the low angle radiation pattern of the antenna (See Sievenpiper Abstract).

Regarding claims 4-6, Sievenpiper et al disclose a multiple frequency comprising the first frequency band is in a higher and a lower frequency side than the second frequency (Sievenpiper. Col. 9, Line 28), wherein the first antenna (10) is inverse L-shape antenna (Sievenpiper. Fig. 3).

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Regarding claims 9-12, Tanaka Mokoto disclose a multiple frequency common antenna comprising the second antenna (30) is a monopole antenna (Tanaka. Fig. 3);

- the second antenna (34) is a helical antenna (Tanaka. Fig. 17);
- the second antenna is a non-uniform helical antenna having a plurality of different pitches (Tanaka. Fig. 14-19);
- the second antenna (34) includes a linear conductor bar and a helical antenna which are cascade connected to each other (Tanaka. Fig. 17).

Allowable Subject Matter

7. Claims 2, 7-8 and 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Citation of relevant Prior Art

Prior Art Sievenpiper et al (USP. 6,483,481) disclose textured surface having high electromagnetic impedance in multiple frequency bands.

Prior art Yablonovitch et al (USP. 6,262,495) disclose circuit and method for eliminating surface current on metals.

Inquiry


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TC
January 7, 2005



WILSON LEE
PRIMARY EXAMINER